

REMARKS

Claims 12 and 15-18 are currently pending in the application. Claims 12 and 15-18 are amended. No new matter is presented. The above amendments and the following remarks are considered by Applicants to overcome the rejections raised by the Examiner and place the application in condition for allowance. An early Notice of Allowance is therefore requested.

Claim Rejections – 35 U.S.C. § 112

Claims 12 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claim 12 and 15-18 are amended to more clearly recite the features of the claimed invention. No new matter is presented. In view of these amendments, Applicants request the withdrawal of the rejection of claims 12 and 15-18 under 35 U.S.C. § 112.

Claim Rejections – 35 U.S.C. § 103

Claims 12 and 15-18 are rejected pursuant to 35 U.S.C. § 103 as being unpatentable over Koppel in view of Qian. Applicants respectfully traverse the rejection.

First, the claimed invention is not obvious because there are significant differences between the claimed invention and the cited references. Koppel discloses the use of a laser scanning microscope (an “LSM”) for carrying out fluorescence correlation spectroscopy (“FCS”). Koppel uses a confocal LSM to gather the data that is correlated with respect to space and time for performing FCS.

Koppel, however, does not disclose using an LSM unit *and* an FCS device unit to analyze molecular interactions, a limitation required by independent claim 12. Instead, Koppel uses only an LSM to carry out these tasks. Since Koppel does not disclose using an LSM unit and an FCS device unit to analyze molecular interactions, it follows that Koppel also does not disclose a shared control unit for operating an LSM unit and an FCS device unit, or an FSC device unit providing data and analysis based on a correlation with the image of the LSM unit, as also required by independent claim 12. Further, Qian does not cure these

deficiencies. Thus, even if one combined the teachings of the cited references, one would not arrive at the claimed invention.

Further, the claimed invention is not obvious because it would not have been obvious to one of ordinary skill in the art to add the missing limitations discussed above to the teachings of the cited references, because Koppel teaches away from the claimed invention. As discussed above, Koppel uses an LSM for FCS. Such an arrangement is fraught with problems. For example, the measuring accuracy is limited because of imprecise knowledge of the size of the selection volume. Further, problems are caused by the substantial noise of the system in molecular samples at low photon rates and the low detection efficiency. Image errors brought about by angular deviations or movements of the beam running along the scanning mirror lead to changes in the shape and size of the confocal volume, which have an immediate effect as fluctuation errors in the measurement results of the measured temporal correlation, and which also corrupt the sought-for information results of the analysis.

The claimed invention overcomes these problems by using an LSM unit *and* an FCS device unit to analyze molecular interactions. The failure of the cited references to adopt this arrangement to overcome the above problems itself illustrates that it would not have been obvious to one of ordinary skill in the art to modify the teachings of the cited references to arrive at the claimed invention. For the foregoing reasons, Applicants respectfully request withdrawal of the rejection.

For the reasons presented above, Applicants believe the pending claims in the application define patentable subject matter and should be passed to issue at the earliest possible time. A Notice of Allowance is respectfully requested.

Respectfully submitted,

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